

## REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

As a preliminary matter, Applicants note the Office Action's acceptance of the drawings filed on January 6, 2005, acknowledgement of Applicants' claim for foreign priority under 35 U.S.C. § 119(a)-(d), receipt of all certified copies of the priority documents and consideration of the Information Disclosure Statements filed on January 6, 2005, April 4, 2005 and April 8, 2008.

Claims 4-7 stand rejected under 35 U.S.C. § 112, ¶ 2 as being indefinite. Claims 1, 2, 6 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,187,086 to Koehring. Claims 1-8 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 7,157,177 to Chan. Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan.

The foregoing amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are in the application is presented, with an appropriate defined status identifier. As set forth above, claims 1 and 4-8 have been amended. New claim 11 has been added. Claims 2, 3 and 9 remain unchanged. After amending the claims as set forth above, claims 1- 11 are pending in this application for consideration.

Applicants respectfully submit that the claims are patentably distinguishable over the cited references as required by 35 U.S.C. §§ 102 and 103. Applicants further submit that the cited references, whether considered alone or in combination, fail to disclose, teach or suggest Applicants' claimed gas permeable substrate including a *porous metallic plate having a plurality of through holes which form openings in an upper surface and a lower surface thereof and at least one of the upper surfaces and the lower surfaces of the porous metallic plate is substantially smooth* as required by sole independent claim 1. Accordingly, independent claim 1 and claims dependent therefrom are patentably distinguishable over the cited references. This distinction will be further described below.

**The Claims Are Definite**

Claims 4-7 stand rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as the invention. In particular, the Examiner states that the following features are unclear: (1) “*electrode material*”; (2) “*reforming catalyst*”; (3) “*an air electrode layer*”; (4) “*a fuel electrode layer*”; (5) “*an intermediate layer*”; (6) “*an etching board*”; (7) “*a punching board*”; and (8) “*a collector*”. By this amendment, Applicants have amended the claims to be more clear and definite. For example, “*electrode material*” has been amended to “*electrode forming material*”; “*reforming catalyst*” has been amended to “*fuel-reforming catalyst*”; “*etching board*” has been amended to “*etched board*”; “*punching board*” has been amended to “*punched board*”; and “*a collector*” has been amended to “*an electron collector*”.

In addition, Applicants respectfully submit that the air electrode, fuel electrode and intermediate layers are clear and definite and discussed on page 2, line 1 and page 9, lines 9-23 of the present specification and shown in FIGS. 5 and 6 of the drawings. Applicants respectfully submit that the claims, as amended, are definite and are in full compliance with the requirements set forth under 35 U.S.C. § 112, ¶ 2. Reconsideration and withdrawal of the rejection is respectfully requested.

**The Claims Distinguish Over The Cited References**

Claims 1, 2, 6 and 8 stand rejected as being anticipated by Koehring and claims 1-8 stand rejected as being anticipated by Chan. In response, Applicants traverse the rejections of these claims and respectfully submit these claims are allowable at least for the reasons that follow.

MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Section 103 amplifies the meaning of this anticipation standard by pointing out that anticipation requires that the claimed subject matter must be “*identically disclosed or described*” by the prior art

reference. (Emphasis added.) It is respectfully submitted that neither Koehring nor Chan describes each and every element of any of the claims.

Embodiments of the present invention are directed to a gas permeable substrate. The gas permeable substrate according to amended independent claim 1 includes a porous metallic plate and particles. The porous metallic plate has a plurality of through holes. The particles are filled in the through holes.

According to one embodiment of the present invention as recited in amended independent claim 1, *the plurality of through holes form openings in an upper surface and a lower surface thereof and at least one of the upper surface and the lower surface of the porous metallic plate is substantially smooth*. Support for the amendments to claim 1 can be found on page 5, line 13 of the present specification. With these features and arrangements, a solid oxide fuel cell is provided having a lightweight and thin gas permeable substrate which has high gas diffusion, a high contact rate and good adhesion with a functional material (Specification, page 3, lines 6-10).

One exemplary embodiment of the present invention is illustrated in FIGS. 1-3 which shows a porous metallic plate 3 having a plurality of through holes 5 forming openings 5a and 5b in an upper surface 3a and a lower surface 3b of the porous metallic plate 3 with particles filled in the through holes, whereby at least one of the upper surface or the lower surface of the porous metallic plate 3 is substantially smooth. Applicants respectfully submit that the cited references fail to disclose these claimed features and arrangements as well as the added benefits provided.

The Koehring reference is directed to porous metal elements that are impregnated with a suitable lubricant material (Koehring, column 1, lines 2-5). As illustrated in FIGS. 1 and 2, Koehring appears to disclose a porous metal layer 32 bonded to a non-porous metal layer 20 forming a composite structure 32, whereby the pores of the porous metal layer 32 are filled with a lubricating compound 42 (column 3, lines 33-62 and column 4, lines 38-45). Koehring's porous metal layer 32, however, fails to qualify as the claimed porous metal plate because Koehring's porous metal layer 32 does not include *the plurality of through holes*

***which form openings in an upper surface and a lower surface thereof (i.e., the porous metallic plate).*** There is no opening on the bottom surface of Koehring's porous metal layer 32 because the bottom surface is bonded to the non-porous metal layer 20. Thus, for this reason alone, Koehring fails to anticipate claim 1.

Furthermore, Koehring fails to disclose ***at least one of the upper surface and the lower surface of the porous metallic plate is substantially smooth.*** There is absolutely no disclosure in Koehring of the texture of the porous metal layer 32.

Therefore, for at least the reasons set forth above, Koehring fails to anticipate the claimed invention and the rejection should be withdrawn.

The Chan reference is directed to a porous fuel cell electrode structure having one or more conformal metallic layers deposited on one or more pore surfaces (Chan, abstract, lines 1-5). As illustrated in FIGS. 2A-2C, Chan appears to disclose a substrate 210 having one or more discrete bulk matrix regions 220 disposed across a top surface 230 of the substrate 210, whereby each of the discrete bulk matrix regions 220 is defined by a plurality of acicular or columnar pores 240 that extend through the substrate 210 (column 5, lines 41-57). To best highlight the differences between the present invention and Chan, a comparison is made between FIG. 2 of the present invention and FIG. 2B of Chan. As clearly illustrated in FIG. 2 of the present invention, gas permeable substrate 1 is arranged such that a plurality of through holes 5 form openings 5a and 5b in the upper surface 3a and the lower surface 3b of the porous metallic plate 3. To the contrary, there are no holes on Chan's top surface 230 and bottom surface 235 of its substrate 210. Therefore, Chan fails to disclose ***the plurality of through holes which form openings in an upper surface and a lower surface of the porous metallic plate.*** Thus, for this reason alone, Chan fails to anticipate claim 1.

Furthermore, Chan fails to disclose ***at least one of the upper surface and the lower surface of the porous metallic plate is substantially smooth.*** There is absolutely no disclosure in Chan of the texture of the substrate 210.

Therefore, for at least the reasons set forth above, Chan fails to anticipate the claimed invention and the rejection should be withdrawn.

As stated above, the Koehring and Chan references each fail to disclose the claimed features and arrangements indicated above. For anticipation, “every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Brown v. 3M*, 60 USPQ2d 1375 (Fed. Cir. 2001). Thus, neither Koehring nor Chan anticipates claim 1. Thus, independent claim 1 is allowable.

Claims 2-9 and 11 depend from claim 1 and are allowable therewith for at least the reasons set forth above without regard to the further patentable features contained in these dependent claims. Further remarks regarding the asserted relationship between any of the claims and the cited references are not necessary in view of the allowability of the claims. Any silence on the part of the Applicants’ regarding statements made in the Office Action should not be considered acquiescence to the stated grounds of rejection.

### **Conclusion**

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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